EXHAUST SYSTEM 25

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GENERAL DESCRIPTION

Two basic designs of exhaust system are utilised on the 78½ Transit range and each system can be adapted for all body variants, Figs. 1 and 2.

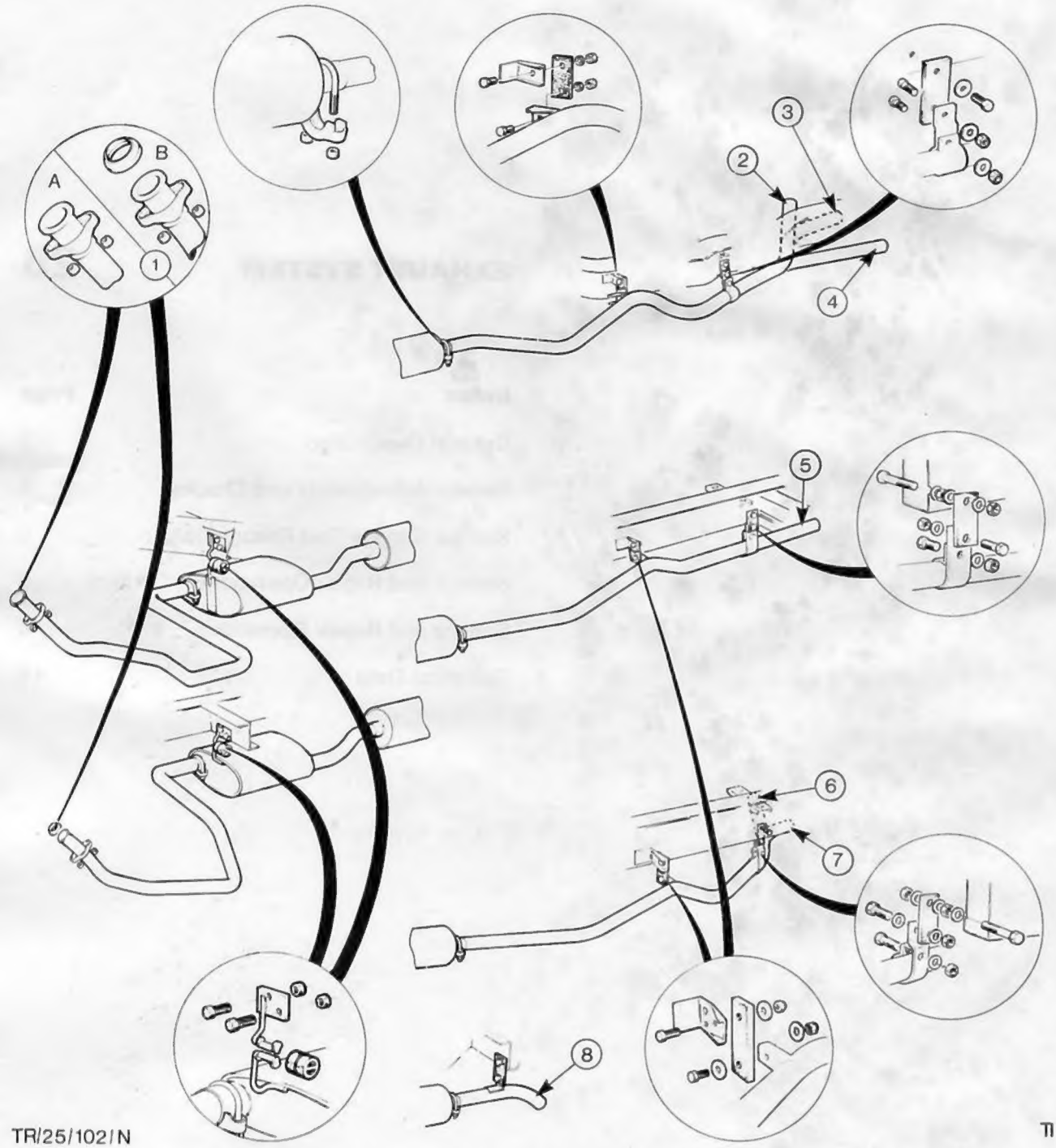

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Fig. 1. Exhaust layout for Transit variants fitted with the 4 cylinder in-line OHV (Kent) engine and 4 cylinder Diesel (York) engine

1A Diesel (LCX and LCY)
1B Kent (LCX)
2 Parcel Delivery Van (Diesel LCY)
3 Van and Bus (Diesel LCY)
4 Chassis Cab (Diesel LCY) (Except UK)
5 Chassis Cab (Kent and Diesel LCX) (Except UK)
6 Parcel Delivery Van (Kent and Diesel LCX)
7 Van and Bus (Kent and Diesel LCX)
8 Chassis Cab (Kent and Diesel LCX and LCY) (UK only)

GENERAL DESCRIPTION (cont'd)

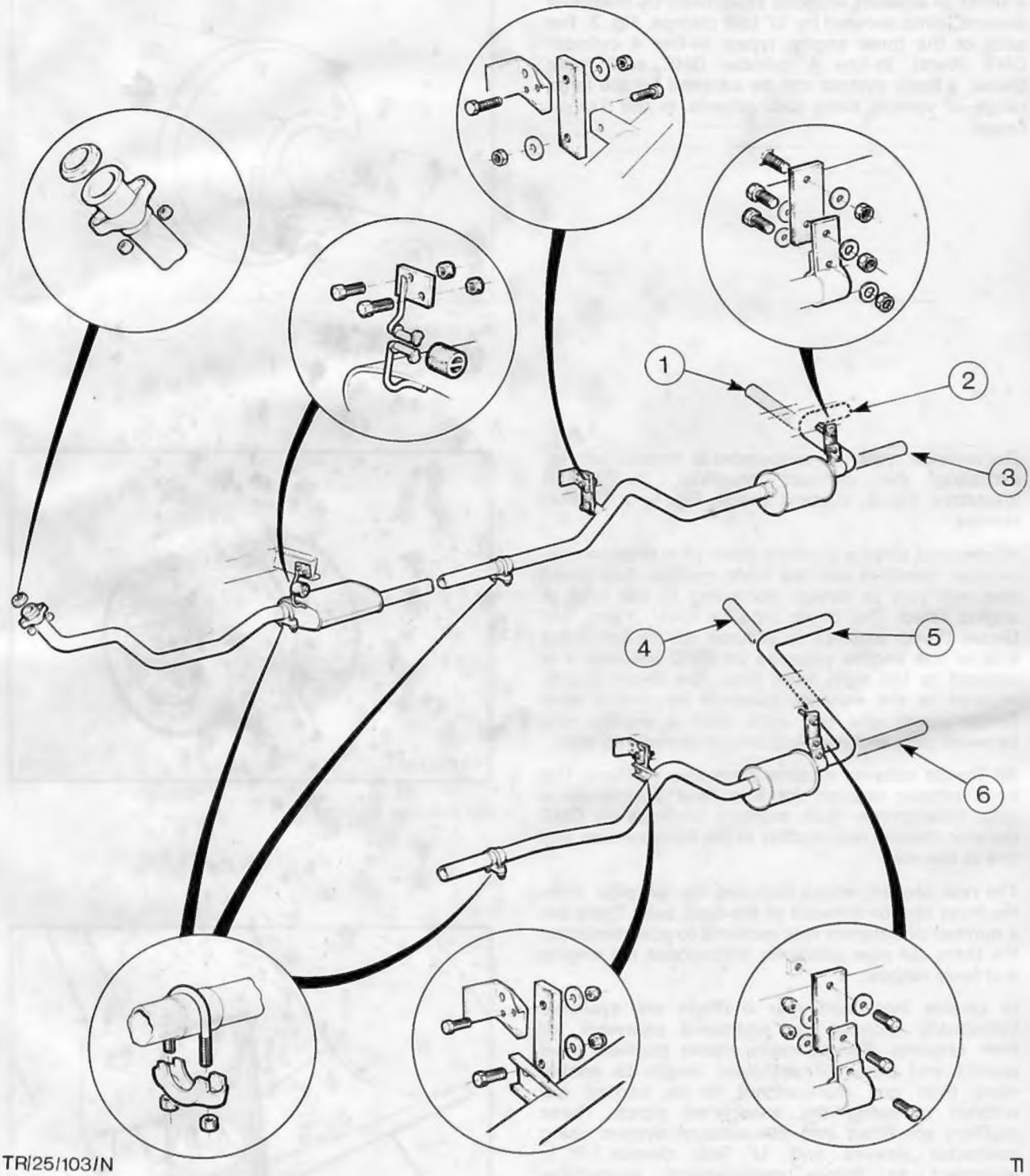

Fig. 2. Exhaust layout for Transit variants fitted with the 4 cylinder in-line OHC engine

1 Parcel Delivery Van (LCX)
2 Van (LCX)
3 Chassis Cab (LCX)
4 Parcel Delivery Van (LCY)
5 Van (LCY)
6 Chassis Cab (LCY)

GENERAL DESCRIPTION (cont'd)

The exhaust system on the Transit range consists of a series of exhaust sections assembled by means of sleeved joints secured by 'U' bolt clamps, Fig. 3. For each of the three engine types, in-line 4 cylinder OHV (Kent), in-line 4 cylinder OHC and Yorks Diesel, a basic system can be adopted for the large range of vehicle sizes and variants in the Transit range.

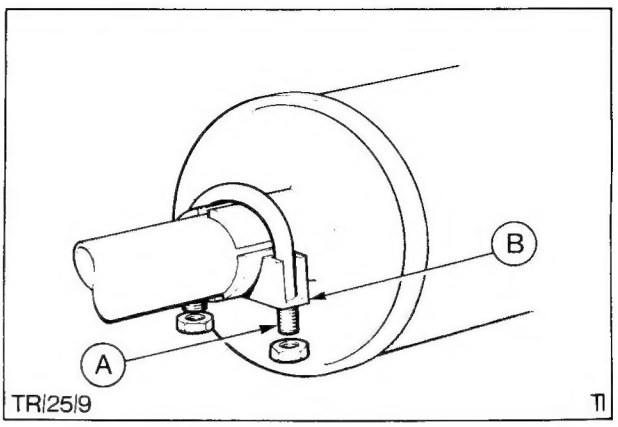

Fig. 3. 'U' bolt clamp
A – 'U' bolt
B – Clamp

The exhaust system is suspended at three locations, excluding the exhaust manifold, by rubber insulators, Fig. 4, support straps, Fig. 5, or bracket clamps

All systems employ a single down pipe between the exhaust manifold and the front muffler. This down pipe will vary in design according to the type of engine fitted. The down pipe on OHV (Kent) and Diesel (York) variants is secured to the left hand side of the engine whereas on OHC variants it is secured to the right hand side. The down pipe is secured to the exhaust manifold by means of a flange clamp and two nuts, with a sealing ring between pipe and manifold on petrol variants only.

All Transit exhaust systems have two mufflers. The front exhaust section, for Kent and York variants only, incorporates both mufflers whereas on OHC variants there is one muffler in the front section and one in the rear.

The rear section, which includes the tail pipe, joins the front section forward of the back axle. There are a number of different rear sections to accommodate the three tail pipe positions, throughout the engine and body ranges.

In service front and rear mufflers are available individually without the additional pipework for their sections. Service replacement mufflers have special end pipes of sufficient length to enable more than one replacement to be carried out without renewing the associated pipes. These mufflers are fitted into the exhaust system using connector sleeves and 'U' bolt clamps. It is important to follow replacement procedures carefully to obtain maximum utilization and life of all pipes.

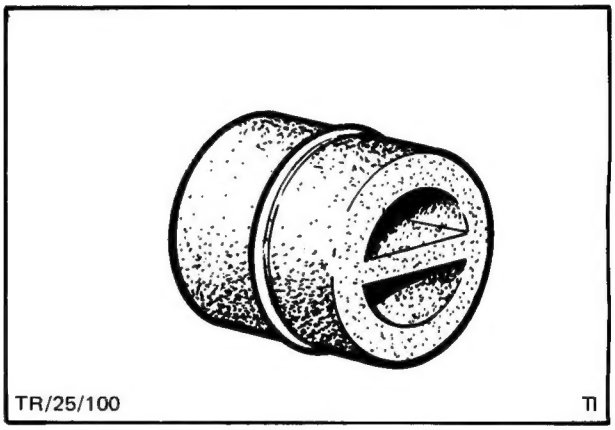

Fig. 4. Rubber insulator

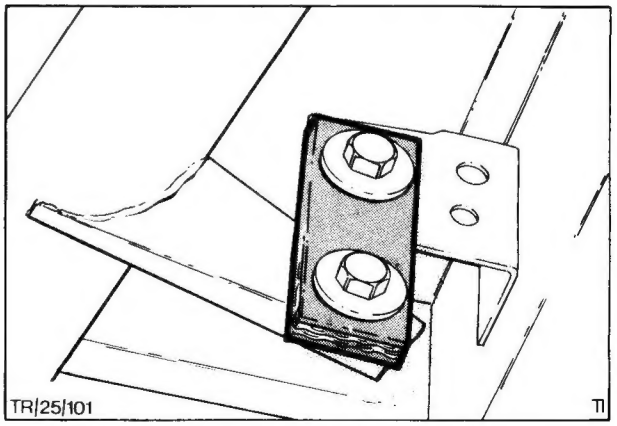

Fig. 5. Support strap

SERVICE ADJUSTMENTS AND CHECKS

At specified service intervals, the following items should be carefully checked.

1. **First service only – All engine variants.**

   Check the exhaust manifold and down pipe bolts and nuts for correct tightness.

2. Check for exhaust leaks.

   All exhaust system joints should be checked.

3. Visually check the entire exhaust system for signs of corrosion and damage.

4. Check alignment, condition and security of all exhaust hangers, brackets and rubber insulators.

SPECIAL SERVICE TOOL RECOGNITION

British Sourced	European Sourced	German Sourced	Tool Name
			No special service tools required.

SERVICE AND REPAIR OPERATIONS CONTENT

EXHAUST SYSTEM		Described in this publication	Contained in operation
25 204	Exhaust system – replace	X	
25 223	Muffler – front – replace	X	
25 243	Muffler – rear – replace	X	
25 261	Exhaust pipe – front left – replace	X	
25 263	Exhaust pipe – front right – replace	X	
25 293	Seal – manifold to exhaust pipe – replace	—	25 204
25 424	Support straps – exhaust mounting – replace (all)	X	
25 454	Bracket – exhaust mounting – remove and install	X	

SERVICE AND REPAIR OPERATIONS

25 204 EXHAUST SYSTEM – REPLACE (OHV and Diesel Engine Variants)

Special Service Tools Required: None

NOTE:

1. The exhaust system is suspended by rubber insulators and hangers, and by support straps with bracket clamps mounted to designated points on the chassis. The method of suspension may vary depending on body variant.
2. Apply some easing oil to all nuts, bolts, clamps and joints to be separated prior to working on vehicle. This will assist in freeing tight joints and hardware.

To Remove

1. Place vehicle on a ramp or over a pit, open hood and fit fender covers.
2. Remove 'U' bolt that secures rear pipe section to front muffler section.
3. Remove lower bolt from both support straps, Figs. 6 and 7. This allows free movement of the rear pipe.
4. Separate rear pipe section from front muffler section by twisting pipe in alternate directions and sliding clear of vehicle. Remove bracket clamp noting which way round it is fitted.

   NOTE: If necessary, separate sections by cutting, as complete system is being discarded.

   If it is desired to re-use the exhaust support bracket clamp, loosen nut and bolt and slide clamp from tail pipe.

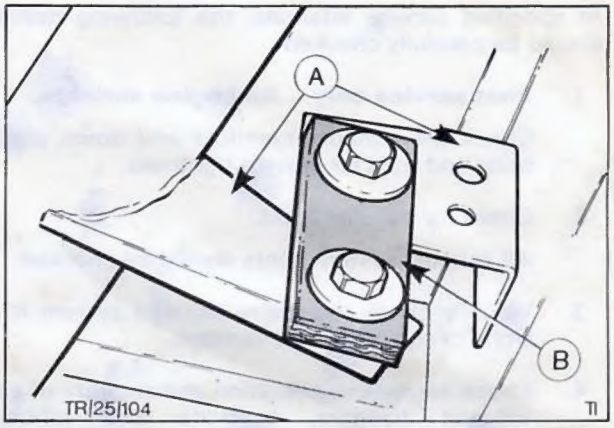

Fig. 6. Front support of rear tail pipe
A – Welded brackets
B – Support strap

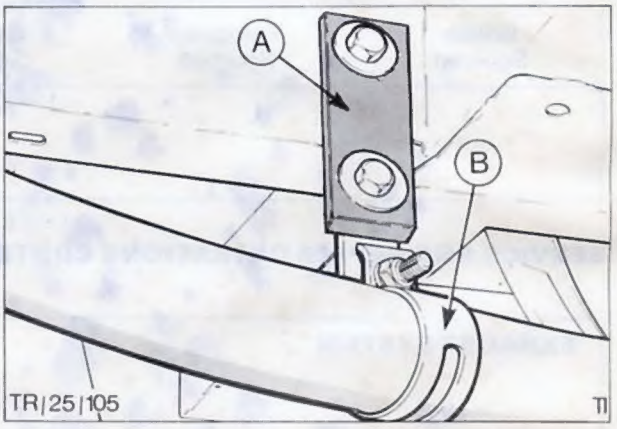

Fig. 7. Rear support of rear tail pipe
A – Support strap
B – Bracket clamp
Note: Bracket clamp is reversed for certain body variants

5. Disconnect exhaust front down pipe from exhaust manifold by removing two nuts and allow down pipe free movement, Fig. 8. Remove sealing ring (where fitted) and retain.
6. Disconnect front muffler section from its support point by unhooking rubber insulator from hanger, Fig. 9. Guide exhaust clear of vehicle.
7. Remove 'U' bolt clamp that secures front down pipe to front muffler section. Separate down pipe and muffler, by cutting, if necessary as complete system is being discarded. Remove manifold clamp ring from down pipe.

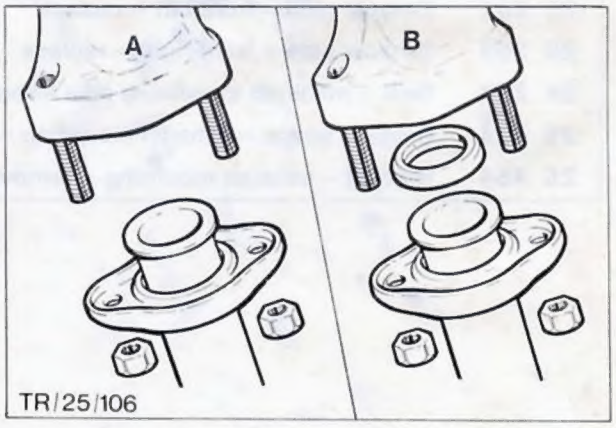

Fig. 8. Exhaust manifold front down pipe clamp
A – Diesel variants without sealing ring
B – Petrol variants with sealing ring

To Replace

8. Clean all contact surfaces of manifold, manifold clamp and, where fitted, sealing ring (only fitted to petrol variants) with emery cloth to remove any carbon build up. Examine all exhaust supports, bracket clamps, support straps and rubber insulator to see if they are suitable for re-use. Renew if necessary.
9. Slide manifold clamp ring onto the front down pipe and loosely fit tail pipe bracket clamp to rear pipe section.

   NOTE: Care must be taken to fit tail pipe bracket clamp correct way round for particular body variants, as noted in sub-operation 4.

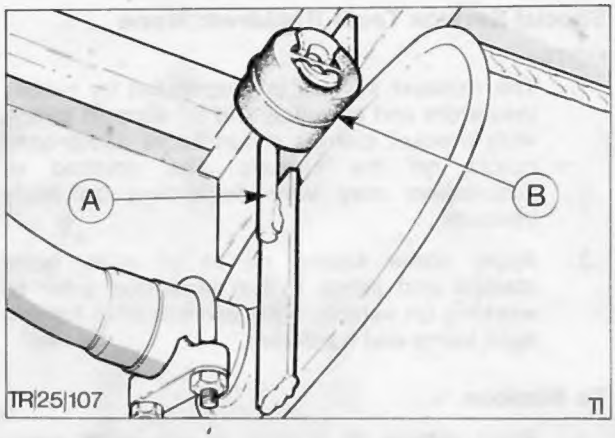

Fig. 9. Front mounting
A – Exhaust hanger
B – Rubber insulator

10. Connect front muffler section to front down pipe, using an exhaust sealer on the joint, to ensure a gas tight fit, Fig. 10.
11. Loosely secure the joint with 'U' bolt clamp. Position this combined section (front muffler section and down pipe) under the vehicle.
12. Suspend this section from the front rubber insulator and secure down pipe to manifold (on petrol variants insert manifold sealing ring). Do not fully tighten manifold clamp nuts at this stage.
13. Position rear section of pipe under vehicle and connect front and rear sections, using an exhaust sealer on the joint to ensure a gas tight fit.
14. Connect two remaining support straps but only loosely tighten the nuts and bolts.

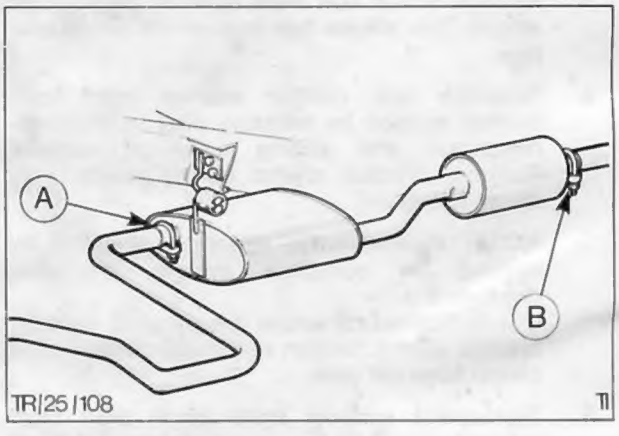

Fig. 10. Front muffler section
A – Join between front down pipe and front muffler
B – Join between front muffler and rear pipe section

15. Loosely secure joint between front and rear sections with 'U' bolt clamp, Fig. 11.
16. Align complete system ensuring there is no strain or slackness on exhaust insulator and support straps. Ensure that complete system does not touch the vehicle body or foul other components. Check that the down pipe is seating properly at manifold connection.
17. Securely tighten all 'U' bolt clamps, support and insulation strap fixings and the exhaust manifold clamp.
18. Start engine and check to ensure that there are no exhaust leaks.
19. Remove fender covers, close hood and remove vehicle from ramp or from over pit.

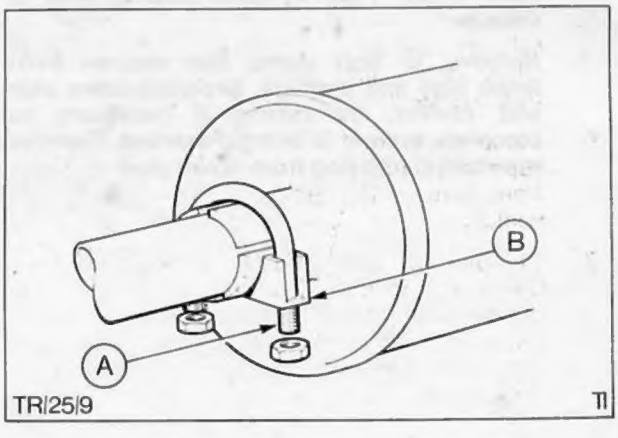

Fig. 11. Typical 'U' bolt clamp joint
A – 'U' bolt
B – Clamp

25 204 EXHAUST SYSTEM – REPLACE (OHC)

Special Service Tools Required: None

NOTE:

1. The exhaust system is suspended by rubber insulators and hangers, and by support straps with bracket clamps mounted to designated points on the chassis. The method of suspension may vary depending on body variants.
2. Apply some easing oil to all nuts, bolts clamps and joints to be separated prior to working on vehicle. This will assist in freeing tight joints and hardware.

To Remove

1. Place vehicle on a ramp or over a pit, open hood and fit fender covers, and disconnect the battery.
2. Remove 'U' bolt that secures rear muffler section to front muffler section.
3. Remove lower bolt from each of the support straps. This allows free movement of the rear pipe.
4. Separate rear muffler section from front muffler section by twisting pipe in alternate directions and sliding clear of vehicle. Remove bracket clamp noting which way round it is fitted.

   NOTE: If necessary, separate sections by cutting, as complete system is being discarded.
   If it is desired to re-use the exhaust support bracket clamp, loosen nut and bolt and slide clamp from tail pipe.
5. Disconnect exhaust front down pipe from exhaust manifold by removing two nuts and allow down pipe free movement. Remove manifold sealing ring, Fig. 12.
6. Disconnect front muffler section from its support point by unhooking rubber insulator from hanger, Fig. 13. Guide exhaust clear of vehicle.
7. Remove 'U' bolt clamp that secures front down pipe and mufflers. Separate down pipe and muffler, by cutting if necessary as complete system is being discarded. Remove manifold clamp ring from down pipe.

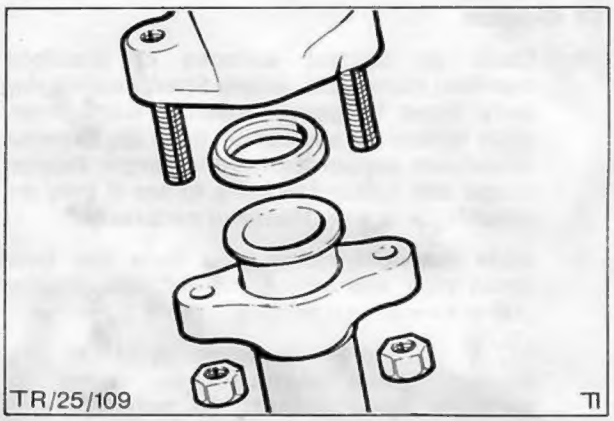

Fig. 12. Exhaust manifold/front down pipe clamping with sealing ring

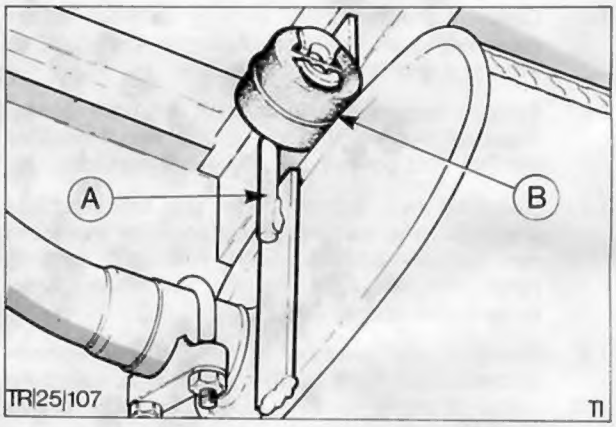

Fig. 13. Front mounting
A – Exhaust hanger
B – Rubber insulator

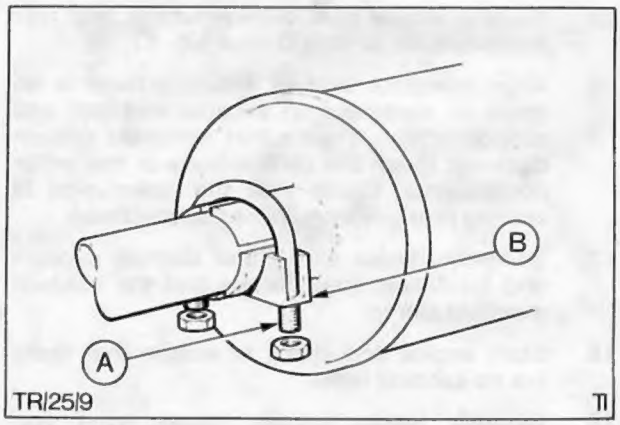

Fig. 14. Typical 'U' bolt clamp joint
A – 'U' bolt
B – Clamp

To Replace

8. All contact mating surfaces of manifold, manifold clamp and sealing ring must be cleaned with emery cloth to remove any carbon build up. Examine all exhaust supports, bracket clamps, support straps and rubber insulators to see if they are suitable for re-use.
   Renew if necessary.

9. Slide manifold clamp ring onto the front down pipe, and loosely fit tail pipe bracket clamp to rear pipe section.

   NOTE: Care must be taken to fit tail pipe bracket clamp correct way round for particular body variants, as noted in sub-operation 4.

10. Connect front muffler section to front down pipe, using an exhaust sealer on the join, to ensure a gas tight fit.

11. Loosely secure the joint with 'U' bolt clamp. Position this combined section, (front muffler section and down pipe), under the vehicle, Fig. 15.

12. Suspend this section from the front rubber insulator and secure down pipe to manifold remembering to insert manifold sealing ring. Do not fully tighten manifold clamp nuts at this stage.

13. Position rear section of pipe under vehicle and connect front and rear sections, using an exhaust sealer on the joint to ensure a gas tight fit.

14. Connect the two remaining support straps but only loosely tighten the nuts and bolts, Figs. 16 and 17.

15. Loosely secure joint between front and rear muffler sections with 'U' bolt clamp.

16. Align complete system ensuring there is no strain or slackness on exhaust insulator and support straps. Ensure that the complete system does not touch the vehicle body or foul other components. Check that the down pipe with the sealing ring is seating properly at the manifold connection.

17. Securely tighten all 'U' bolt clamps, support and insulation strap fixings and the exhaust manifold clamp.

18. Connect battery, start engine and check all joints for exhaust leakage.

19. Remove fender covers, close hood and remove vehicle from ramp or from over pit.

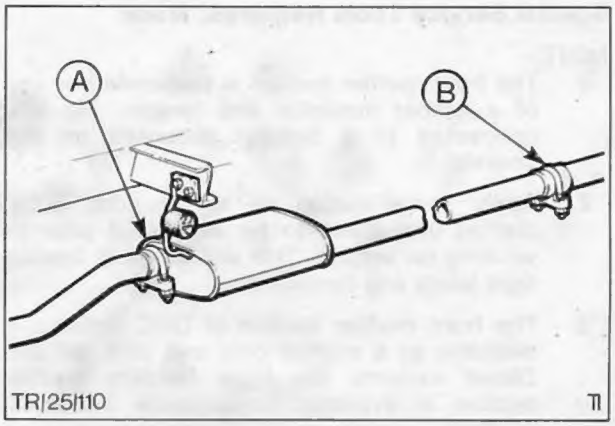

Fig. 15. Front muffler section
A – Join between front down pipe and front muffler
B – Join between front and rear muffler sections

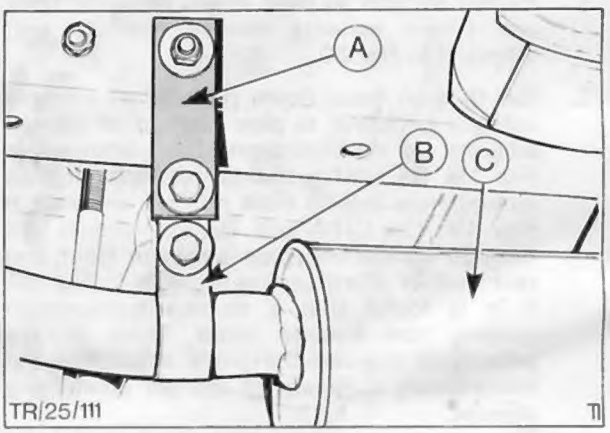

Fig. 16. Rear support of rear muffler section
A – Support strap
B – Bracket clamp
C – Rear muffler
NOTE: Bracket clamp is reversed for certain body variants

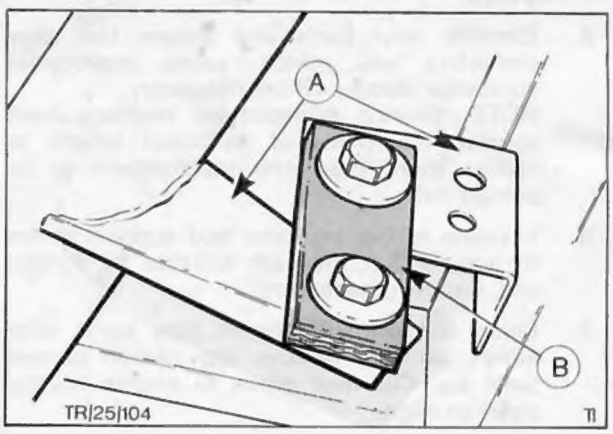

Fig. 17. Front support of rear muffler section
A – Welded brackets
B – Support Strap

25 223 MUFFLER – FRONT – REPLACE

Special Service Tools Required: None

NOTE:

1. The front muffler section is suspended by use of a rubber insulator and hanger, Fig. 18, connected to a bracket mounted on the chassis.
2. Apply some easing oil to all nuts, bolts, clamps and joints to be separated prior to working on vehicle. This will assist in freeing tight joints and hardware.
3. The front muffler section of OHC variants is available as a muffler only and on OHV and Diesel variants the front tandem muffler section is available as separate individual mufflers.

To Remove

1. Place vehicle on a ramp or over a pit.
2. Remove 'U' bolt clamp that secures front muffler section to front down pipe. On OHV and Diesel variants remove rear 'U' bolt clamp, B in Fig. 20.
3. Cut through front down pipe on all variants using a hacksaw at pipe change of section adjacent to muffler connection, arrowed in Fig. 18. On OHC variants cut through pipe immediately behind front muffler, arrowed in Fig. 19. On OHV and Diesel variants cut through connecting pipe between front and rear muffler at mid-point, arrowed in Fig. 20. If it is found that a service replacement muffler has already been fitted in the prescribed manner the pipes should be cut immediately outboard of the old connecting sleeves.
   These cutting operations are essential for removal of front muffler.
4. Unhook from rubber insulator, remove and discard old parts.

To Replace

5. Examine new parts and ensure that pipe diameters will match, using appropriate connector sleeves where necessary.
   NOTE: Service replacement mufflers have special end pipes of sufficient length to enable more than one replacement to be carried out.
6. Examine rubber insulator and support straps to ensure that they are suitable for further use. Renew if necessary.
7. Clean contact surfaces of pipe joints with emery cloth to remove any carbon or rust build up. Cut new pipes to enable mating pipes to align.
8. Chamfer all leading edges of existing and new pipes with a fine file. Apply a small amount of grease to assist sliding and use an exhaust sealer to ensure a gas tight fit on all joints.

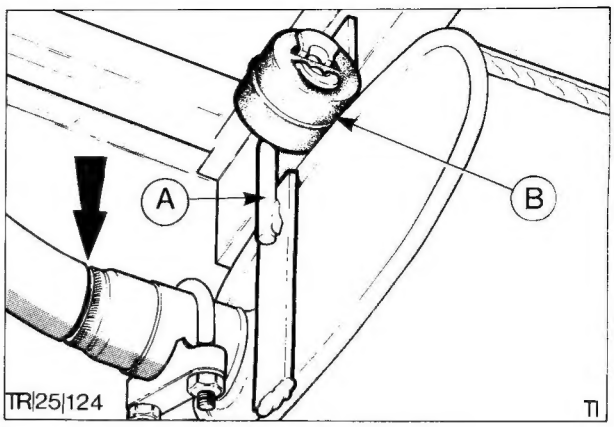

Fig. 18. Front mounting
A – Exhaust hanger
B – Rubber insulator
NOTE: Suitable cutting point arrowed, for all variants

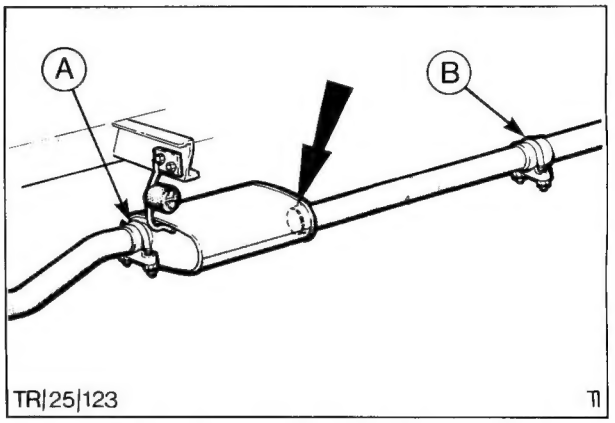

Fig. 19. Front muffler section of OHC variants
A – Join between front down pipe and front muffler
B – Join between front and rear muffler section
NOTE: Suitable cutting point arrowed

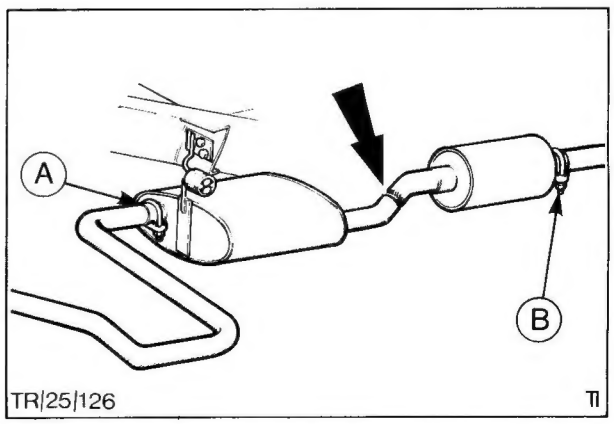

Fig. 20. Front muffler section of OHV and Diesel variants
A – Join between front down pipe and front muffler
B – Join between front muffler and rear pipe section
NOTE: Suitable cutting point arrowed

9. Align new section and connect to the front down pipe using sleeve connector. By twisting in alternative directions or by tapping with a soft mallet slide muffler far enough to enable rear muffler section to be connected. Connect rear pipe section using sleeve connector. Ensure correct alignment of new section to ensure that there is no fouling or any contact with body.
10. Suspend front muffler section from rubber insulator.
11. Fit 'U' bolt clamps to all joints and tighten securely.
12. Start engine and check all joints to ensure there are no exhaust leaks.
13. Remove vehicle from ramp or over a pit.

25 243 MUFFLER – REAR – REPLACE

Special Service Tools Required: None

NOTE:

1. The rear muffler section is suspended by use of support straps with bracket clamp mounted to designated points on the chassis. The method of suspension may vary depending on body variant.
2. Apply some easing oil to all nuts, bolts, clamps and joints to be separated prior to working on vehicle. This will assist in freeing tight joints and hardware.
3. The rear muffler section for OHC variants is available as a muffler only and on OHV and Diesel variants the front tandem muffler section is available as separate individual mufflers.

To Remove

1. Place vehicle on a ramp or over a pit.
2. Remove 'U' bolt clamp that secures rear muffler section to front muffler section on OHV and Diesel variants only.
3. Remove lower bolt from both support straps, OHC variants only. This allows free movement of the rear pipe, Figs. 16 and 17.
4. On OHV and Diesel variants cut pipe midway between front and rear mufflers, arrowed in Fig. 20. On OHC variants cut through pipe immediately in front of rear muffler, arrowed in Fig. 21. Cut through rear tail pipe immediately adjacent to rear muffler on all variants, Figs. 22 and 23.
   If it is found that a service replacement muffler has already been fitted in the prescribed manner the pipes should be cut immediately outboard of the old connecting sleeves.
   Remove bracket clamp noting which way round it is fitted, OHC variants only.
   NOTE: If it is desired to re-use the exhaust support bracket clamp, loosen nut and bolt and slide clamp from tail pipe.

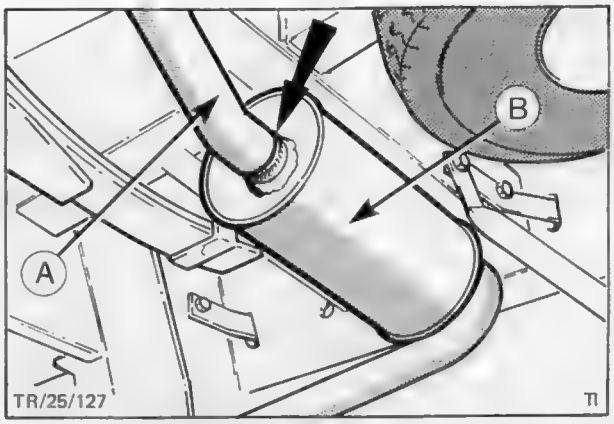

Fig. 21. Front cutting point of rear muffler section on OHC variants, (arrowed)
A – Front pipe of rear muffler section
B – Rear muffler

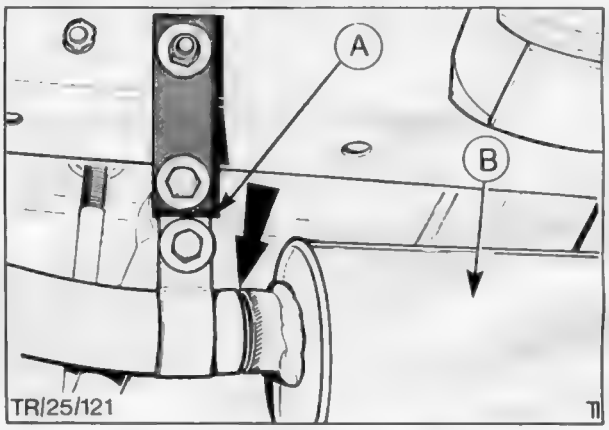

Fig. 22. Rear cutting point of rear muffler section on OHC variants, (arrowed)
A – Support strap/bracket clamp
B – Rear muffler

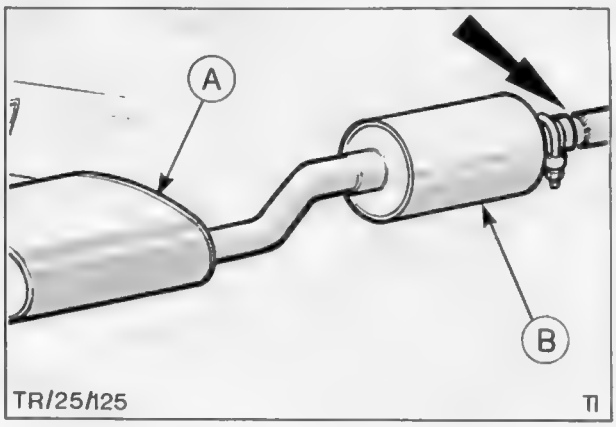

Fig. 23. Rear cutting point for rear muffler on OHV and Diesel variants, (arrowed)
A – Front muffler
B – Rear muffler

25 243 (cont'd)

To Replace

5. Examine new parts and ensure that pipe diameters will match, using appropriate connector sleeves, where necessary.
   NOTE: Service replacement mufflers have special end pipes of sufficient length to enable more than one replacement to be carried out.
6. Examine rubber insulator and support straps to ensure that they are suitable for further use. Renew if necessary.
7. Clean contact surfaces of the pipe joints with emery cloth to remove any carbon or rust build up. Cut new and old pipe to enable mating pipes to align.
8. Chamfer all leading edges of existing pipes and the new pipes, with a fine file.
9. Apply small amount of grease to assist sliding of pipe connectors. Slide connectors onto existing pipes, far enough for new muffler section to align.
10. Align and secure new muffler section with connector sleeves, using an exhaust sealer on the joints to ensure a gas tight fit.
11. Connect the two support straps, OHC variants only, and fit 'U' bolt clamp to joints. Check system ensuring that there is no strain or slackness on the supports and that system is not touching the vehicle body at any point or fouling other components.
12. Tighten 'U' bolt clamps and support strap bolts securely. Start engine and check for exhaust leaks.
13. Remove vehicle from ramp or over a pit.

25 261 EXHAUST PIPE – FRONT, LEFT – REPLACE (OHV and Diesel Engine Variants)

Special Service Tools Required: None

NOTE: Apply some easing oil to all nuts, bolts, clamps and joints to be separated prior to working on vehicle, this will assist in freeing tight joints and hardware.

To Remove

1. Place vehicle on a ramp or over a pit, open hood, fit fender covers and disconnect battery.
2. Disconnect front down pipe from exhaust manifold and allow clamp ring to slide down pipe, to clear securing studs. On petrol variants only, remove sealing ring, Fig. 24.
3. Remove 'U' bolt clamp from down pipe/front muffler joint. Separate down pipe from front muffler, Fig. 25. If down pipe cannot be separated refit 'U' bolt clamp and cut pipe in front of muffler leaving sufficient old pipe to use connector sleeve to join new pipe to muffler section.
   If it is found that a service replacement down pipe has already been fitted in the prescribed manner the pipe should be cut immediately outboard of the old connecting sleeve.
4. Remove front down pipe and detach manifold clamp ring.

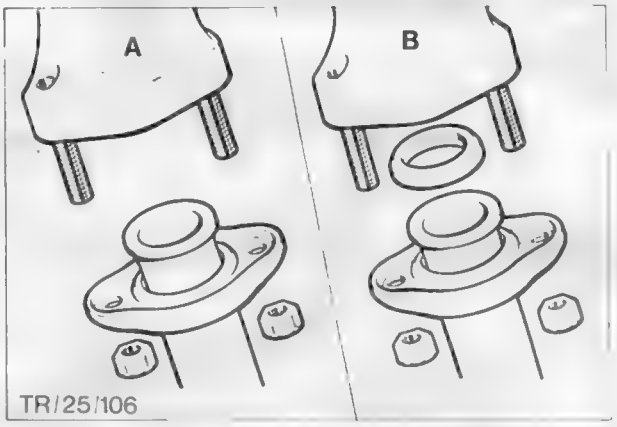

Fig. 24. Exhaust manifold front down pipe clamp
A – Diesel variants without sealing ring
B – Petrol variants with sealing ring

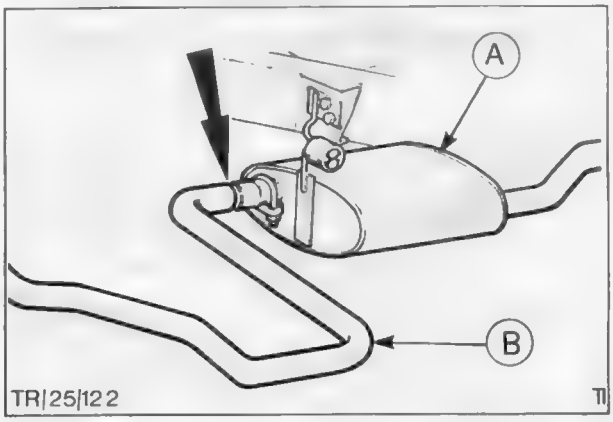

Fig. 25. Join between front muffler section and front down pipe
A – Front muffler
B – Down pipe
NOTE: Suitable cutting point arrowed

To Replace

5. Check that rubber insulator, supporting front muffler, is suitable for further use. Renew if necessary.
6. Clean contact surfaces of sealing ring (petrol variants only), manifold and manifold clamp ring with emery cloth to remove any carbon build up.
7. Chamfer leading edges of the front muffler and down pipe joint with fine file.
8. Apply a small amount of grease to the down pipe where it enters the front muffler section and some exhaust sealer on the joint, to ensure a gas tight fit.
9. Slide manifold clamp ring onto front down pipe. Align down pipe and assemble it to front muffler. When connector sleeve is used, cut and file new down pipe to align with old pipe and assemble it with connector to muffler section.

25 263 EXHAUST PIPE – FRONT, RIGHT – REPLACE (OHC)

Special Service Tools Required: None

NOTE: Apply some easing oil to all nuts, bolts, clamps and joints to be separated prior to working on vehicle, this will assist in freeing tight joints and hardware.

To Remove

1. Place vehicle on a ramp or over a pit, open hood, fit fender covers and disconnect battery.
2. Disconnect front down pipe from exhaust manifold and allow clamp ring to slide down pipe to clear securing studs. Remove sealing ring, Fig. 27.
3. Remove 'U' bolt clamp from down pipe/front muffler joint. Separate down pipe from front muffler, Fig. 28. If down pipe cannot be separated refit 'U' bolt clamp and cut pipe in front of muffler leaving sufficient old pipe to use connector sleeve to join new pipe to muffler section.
   If it is found that a service replacement down pipe has already been fitted in the prescribed manner the pipe should be cut immediately outboard of the old connecting sleeve.
4. Remove front down pipe and remove manifold clamp ring.

To Replace

5. Check that rubber insulator supporting front muffler is suitable for further use. Renew if necessary.
6. Clean contact surfaces of sealing ring, manifold and manifold clamp ring with emery cloth to remove any carbon build-up.

Insert metal sealing ring (where applicable) between manifold and down pipe, align manifold clamp and assemble. Do not fully tighten at this stage.

10. Fit, but do not fully tighten, 'U' bolt clamps to new joints, Fig. 26.
11. Ensure correct seating of pipe at manifold connection. Securely tighten exhaust manifold clamp and 'U' bolt clamps.
12. Connect battery, start engine and check to ensure there are no exhaust leaks.
13. Remove fender covers and close hood. Remove vehicle from ramp or over pit.

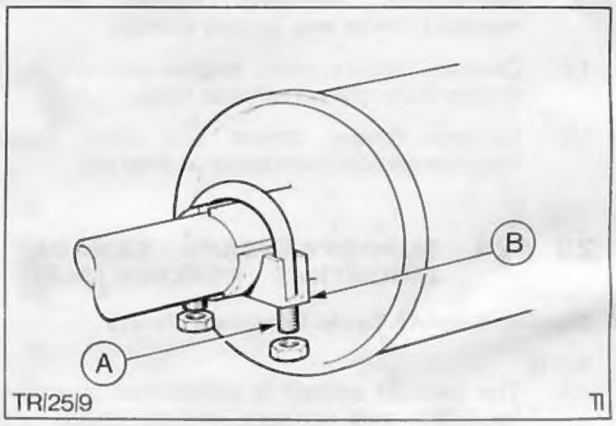

Fig. 26. Typical 'U' bolt clamp joint
A – 'U' bolt
B – Clamp

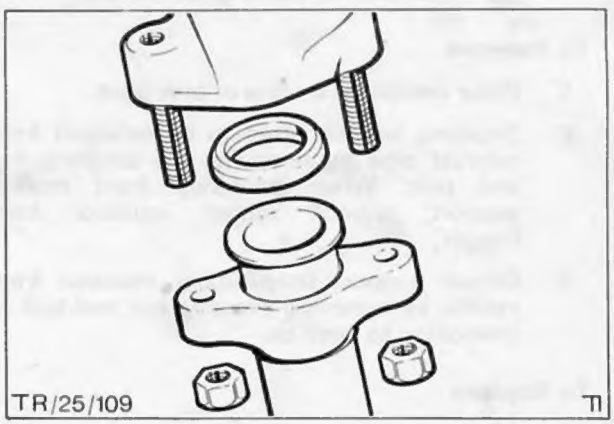

Fig. 27. Exhaust manifold front down pipe clamping with sealing ring

7. Chamfer leading edges of the front muffler and down pipe joint with a fine file.
8. Apply a small amount of grease to the down pipe, where it enters the front muffler section and use exhaust sealer on the joint, to ensure a gas tight fit.
9. Slide manifold clamp ring onto front down pipe. Align down pipe and assemble it to front muffler. When connector sleeve is used, cut and file new down pipe to align with old pipe and assemble it with connector to muffler section.

   Insert metal sealing ring between manifold and down pipe, align manifold clamp and assemble.
   Do not fully tighten at this stage.
10. Fit, but do not fully tighten, 'U' bolt clamps to all joints.
11. Ensure correct seating of pipe and manifold connection. Securely tighten exhaust manifold clamp and 'U' bolt clamps.
12. Connect battery, start engine and check to ensure there are no exhaust leaks.
13. Remove fender covers and close hood. Remove vehicle from ramp or over pit.

25 424 SUPPORT STRAPS – EXHAUST MOUNTING – REPLACE (ALL)

Special Service Tools Required: None

NOTE:
1. The exhaust system is suspended by rubber insulators and hangers, and by straps with bracket clamps mounted to designated points on the chassis. The method of suspension may vary depending on body variant.
2. To assist in dismantling support straps apply some easing oil to all nuts and bolts to be separated prior to working on vehicle.

To Remove

1. Place vehicle on a ramp or over a pit.
2. Separate support strap to be renewed from exhaust pipe by removing the securing nut and bolt. When renewing front muffler support, unhook rubber insulator from hanger.
3. Detach support strap/rubber insulator from vehicle by removing securing nut and bolt or unhooking as need be.

To Replace

4. Align new support strap, secure with nut and bolt. Remember to refit the relevant washers.

   If renewing rubber insulator, Fig. 29, hook insulator onto chassis bracket.

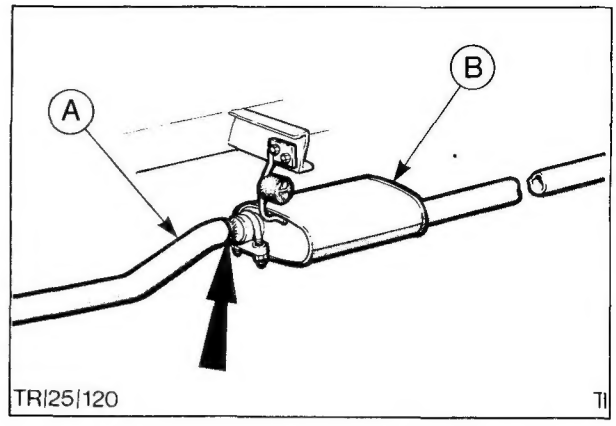

Fig. 28. Join between front muffler section and front down pipe
A – Front down pipe
B – Front muffler section
NOTE: Suitable cutting point arrowed

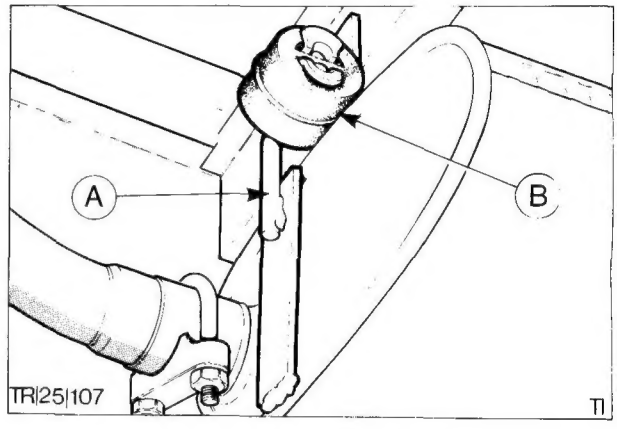

Fig. 29. Front mounting
A – Exhaust hanger
B – Rubber insulator

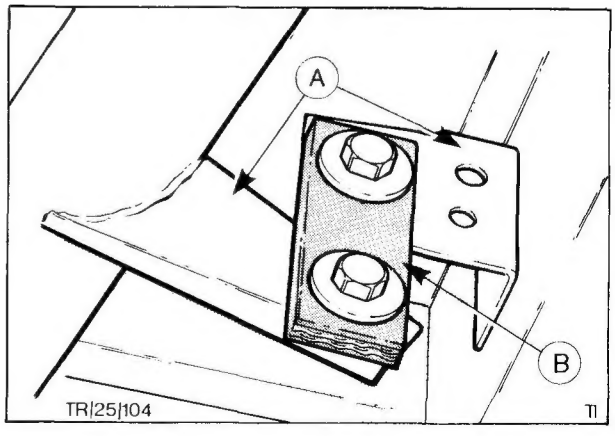

Fig. 30. Front support of rear tail pipe
A – Welded brackets
B – Support strap

5. Align exhaust hanger to support strap. Position and secure support to exhaust with nut and bolts, remembering to refit any washers, Fig. 30 and 31. For rubber insulator, align and reconnect by hooking it on the hanger.
6. Ensure that there is no undue strain or slackness of the support strap/rubber insulator and that they are hanging vertically.
7. Repeat the above operations 2 to 6 for the remaining two exhaust supports.
8. Check to see that the system is not fouling or touching the underbody or other components.
9. Remove vehicle from ramp or from over a pit

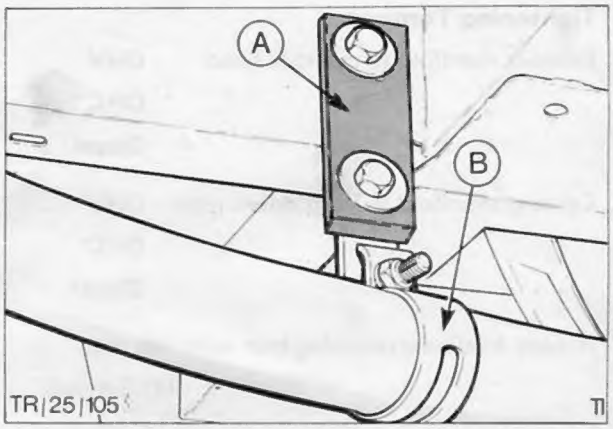

Fig. 31. Rear support of rear tail pipe (OHV/Diesel variant illustrated)
A – Support strap
B – Bracket clamp

25 454 BRACKET – EXHAUST MOUNTING – REMOVE AND INSTALL

Special Service Tools Required: None

NOTE: To assist in dismantling the exhaust mounting bracket/support strap apply some easing oil to all nuts and bolts to be separated prior to working on vehicle.

To Remove

1. Place vehicle on a ramp or over a pit.
2. Separate support strap from exhaust mounting bracket by removing the securing nut and bolt, Figs. 32 and 33.
3. Loosen nut and bolt that secures bracket to exhaust pipe.
4. Slide bracket from exhaust pipe.

   NOTE: It is important to note which way round the bracket is mounted.

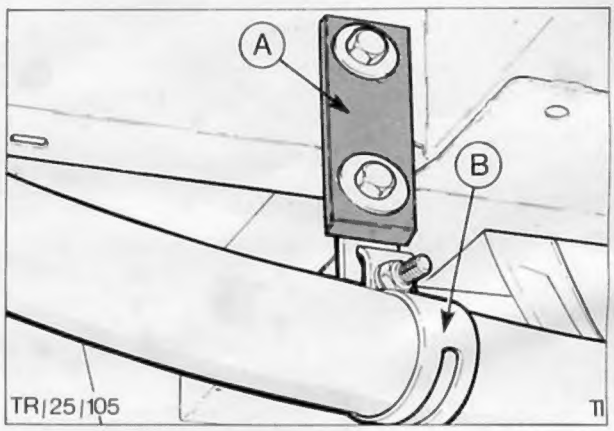

Fig. 32. Rear support of rear tail pipe on OHV and Diesel variants
A – Support strap
B – Bracket clamp
NOTE: Bracket clamp is reversed for certain variants

To Install

5. Clean bracket with wire brush to remove surface rust and dirt.
6. Slide bracket, correct way round as noted in sub operation 4, onto the pipe to align with the support strap.
7. Clamp bracket in vertical position, but do not fully tighten nut and bolt.
8. Connect support strap and fully tighten nut and bolt connecting this assembly.
9. Check that there is no strain or slackness on the support strap and that there is no fouling of pipe and bracket.
10. Fully tighten all nuts and bolts.
11. Remove vehicle from ramp or over a pit.

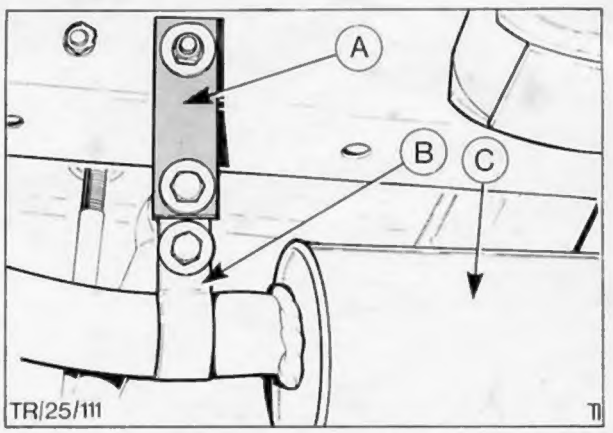

Fig. 33. Rear support of rear muffler section OHC variants
A – Support strap
B – Bracket clamp
C – Rear muffler
NOTE: Bracket clamp is reversed for certain variants

TECHNICAL DATA

Tightening Torques		Nm	kgf.m	lbf.ft
Exhaust manifold to cylinder head	OHV	21 – 25	2,1 – 2,5	15,5 – 18,4
	OHC	21 – 25	2,1 – 2,5	15,5 – 18,4
	Diesel	41 – 51	4,1 – 5,1	30,2 – 37,6
Exhaust manifold to front down pipe –	OHV	21 – 26	2,1 – 2,6	15,5 – 19,2
	OHC	35 – 40	3,5 – 4,0	25,8 – 29,5
	Diesel	21 – 26	2,1 – 2,6	15,5 – 19,2
Rubber Insulator retaining bolt with	M8 nuts	8 – 10	0,8 – 1,0	5,9 – 7,4
	M10 nuts	14 – 17	1,4 – 1,7	10,3 – 12,5
Exhaust brackets – retaining nuts/bolts		8 – 10	0,8 – 1,0	5,9 – 7,4